






**MODIFIED POLYSACCHARIDES HAVING IMPROVED ABSORBENT PROPERTIES  
AND PROCESS FOR THE PREPARATION THEREOF****Publication number:** JP9504331T**Publication date:** 1997-04-28**Inventor:****Applicant:****Classification:**

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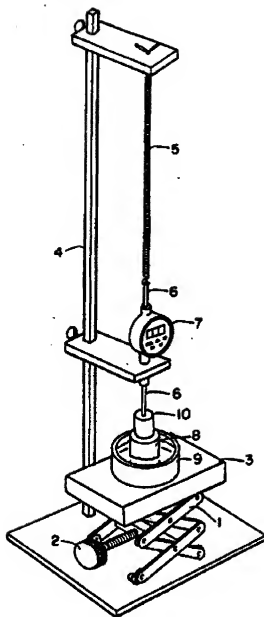
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Abstract not available for JP9504331T

Abstract of corresponding document: **WO9511925**

Disclosed is a method for producing a water-swellaable, generally water-insoluble modified polysaccharide having improved age-stable absorption properties. The method involves forming a mixture of a modified polysaccharide, water, and, optionally, a crosslinking agent, recovering the modified polysaccharide from the mixture and, optionally, heat-treating said recovered modified polysaccharide.



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## CLAIMS

## [Claim(s)]

1. Process Which Forms Water-soluble Carboxy Alkyl Poly Saccharide, Water, and Mixture Containing Cross Linking Agent Process Which Collects These Carboxy Alkyl Poly Saccharides from this Mixture At Temperature Exceeding about 50 Degrees C And the process which heat-treats sufficient time amount to construct a bridge in this carboxy alkyl poly saccharide, and make this poly saccharide into water bloating tendency and water-insoluble nature, and the collected this carboxy alkyl poly saccharide, The carboxy alkyl poly saccharide of this water bloating tendency and water-insoluble nature shows the initial absorptivity value under an operation of about 14 load at least including , and it is about 24 degrees C. At least with about 30% of relative humidity The manufacture approach of the carboxy alkyl poly saccharide of the water bloating tendency characterized by the thing of the initial absorptivity value under an operation of this load for which about 50% is maintained at least after the aging for about 60 days, and water-insoluble nature.
2. Approach given in the 1st term of claim which prepares this carboxy alkyl poly saccharide from poly saccharide chosen from cellulose, starch, guar gum, carrageenan, agar, GERANGAMU, chitin, chitosan, and group that consists of the mixture.
3. Approach given in the 1st term of claim this whose carboxy alkyl poly saccharide is carboxy alkyl cellulose.
4. Approach given in the 1st term of claim this whose carboxy alkyl poly saccharide is carboxymethyl poly saccharide.
5. Approach given in the 4th term of claim this whose carboxymethyl poly saccharide is carboxymethyl cellulose.
6. Approach given in the 1st term of claim chosen from group which consists of metal ion with positive charge exceeding organic compound with which this cross linking agent contains carboxyl group of carboxy alkyl poly saccharide, amino group or hydroxyl, and at least two functional groups that can react, or 2.
7. Approach given in the 6th term of claim chosen from group which this cross linking agent becomes from diamines, polyamine, diols, polyols, and mixture of those.
8. Approach given in the 7th term of claim chosen from group to which this cross linking agent becomes chitosan glutamate, type A gelatin, diethylenetriamine, ethylene glycol, butylene glycol, polyvinyl alcohol, hyaluronic acid, polyethyleneimine, and its derivative list from the mixture.
9. Approach given in the 8th term of claim chosen from group to which this cross linking agent becomes chloroacetic acid and sodium-chloroacetate list from the mixture.
10. An approach given in the 8th term containing the metal ion chosen from the group which this cross linking agent becomes from aluminum<sup>3+</sup>, Fe<sup>3+</sup>, Ce<sup>3+</sup>, Ti<sup>4+</sup>, Zr<sup>4+</sup>, and Ce<sup>4+</sup> of a claim.
11. An approach given in the 10th term of a claim chosen from the group which this cross linking agent becomes from AlCl<sub>3</sub>, FeCl<sub>3</sub>, Ce<sub>2</sub>(SO<sub>4</sub>)<sub>3</sub>, Zr(NH<sub>4</sub>)<sub>4</sub>(CO<sub>3</sub>)<sub>4</sub>, Ce(NH<sub>4</sub>)<sub>4</sub>(SO<sub>4</sub>)<sub>4</sub>·4H<sub>2</sub>O, and its mixture.
12. About this carboxy alkyl poly saccharide, they are about 1 minute - abbreviation 600 at the temperature of about 100 - about 200 \*\*. Approach given in the 1st term of a claim heat-treated between parts.

13. It is an approach given in the 1st term of a claim which has an initial absorptivity value under an operation of a load high about 10% at least rather than the same carboxy alkyl poly saccharide except the heat-treated this carboxy alkyl poly saccharide having prepared without the cross linking agent.

14. It is an approach given in the 13th term of a claim which has an initial absorptivity value under an operation of a load high about 20% at least rather than the same carboxy alkyl poly saccharide except the heat-treated this carboxy alkyl poly saccharide having prepared without the cross linking agent.

15. An approach given in the 1st term of a claim which collects these carboxy alkyl poly saccharides by the evaporation drying method.

16. An approach given in the 1st term of a claim which collects these carboxy alkyl poly saccharides with settling.

17. An approach given in the 1st term of a claim in which this water-soluble carboxy alkyl poly saccharide, water, and this mixture containing a cross linking agent have pH of about 4 - about 9 range.

18. An approach given in the 1st term of a claim this water bloating tendency and a water-insoluble nature carboxy alkyl poly saccharide indicate the initial absorptivity value under an operation of a load of about 17 to be at least.

19. An approach given in the 18th term of a claim this water bloating tendency and a water-insoluble nature carboxy alkyl poly saccharide indicate the initial absorptivity value under an operation of a load of about 20 to be at least.

20. This water bloating tendency and a water-insoluble nature carboxy alkyl poly saccharide are the approach of given [ after the aging for about 60 days ] in the 1st term of a claim of the initial absorptivity value under an operation of this load which holds about 70% at least with about 30% of relative humidity, at least at about 24 degrees C.

21. This water bloating tendency and a water-insoluble nature carboxy alkyl poly saccharide are the approach of given [ after the aging for about 60 days ] in the 1st term of a claim of the initial absorptivity value under an operation of this load which holds about 50% at least with about 100% of relative humidity, at about 24 degrees C.

22. Water-soluble Carboxymethyl Cellulose, Water, And the process which forms the mixture containing the cross linking agent chosen from the group which consists of a metal ion with the positive charge exceeding the organic compound containing the carboxyl group of a carboxy alkyl poly saccharide or hydroxyl, and at least two functional groups that can react, or 2. Process which collects these carboxymethyl celluloses from this mixture At the temperature exceeding about 100 °C And a bridge is constructed in this carboxymethyl cellulose. The process which heat-treats sufficient time amount to make this carboxymethyl cellulose into water bloating tendency and water-insoluble nature, and the collected this carboxymethyl cellulose. The heat-treated this carboxymethyl cellulose has an initial absorptivity value under an operation of about 17 load at least including . At and about 24 degrees C The manufacture approach of the carboxymethyl cellulose of the water bloating tendency characterized by the thing of the initial absorptivity value under an operation of this load for which about 50% is maintained at least after the aging for about 60 days with about 30% of relative humidity at least, and water-insoluble nature.

23. An approach given in the 22nd term of a claim chosen from the group which this cross linking agent becomes from a chitosan glutamate, type A gelatin, diethylenetriamine, ethylene glycol, a butylene glycol, polyvinyl alcohol, hyaluronic acid, polyethylensimine, a chloroacetic acid, sodium chloroacetate,  $AlCl_3$  and  $FeCl_3$ ,  $Ca_2(SO_4)_3$ ,  $Zr(NH_4)_4(CO_3)_4$ ,  $Ce(NH_4)_4(SO_4)_4 \cdot 2H_2O$ , and its mixture.